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**Hydropower Investment
Promotion Project (HIPP)**

GSE's Role and Involvement in ETM and GEMM



APRIL 2012



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Benefits For Georgia

The GEMM and ETM are designed and intended to advance the GoG's Electricity Sector Policies:

- To increase investments in electricity sector
- To minimize barriers for Georgian HPPs entering in Turkish and other regional competitive electricity markets
- To benefit Georgian domestic Tariff customers via improved quality service and reasonable price of electricity



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What is GEMM 2015?

- Georgian Electricity Market Model (GEMM) in 2015 is envisaged as a mechanism that enables electricity trading on the regional competitive power markets and at the same time protects domestic tariff costumers;
- GEMM 2015 is harmonized with regional competitive power markets, carrying necessary minimal technical and legal requirements to benefit from the energy trade.



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Why do we need an Electricity Trading Mechanism (ETM)?

- Turkey and Georgia signed the Cross Border Energy Trading Agreement in January 2012 that set forth general conditions for electricity trading across the new interconnection between Akhaltsikhe, Georgia and Borchka, Turkey. But the agreement **does not** provide the detailed rules needed to sell across the new interconnection.
- For any generator to sell into a foreign competitive electricity market, certain minimum standards are required.
- For the EU and Turkish electricity markets, EU principles and standards of competitive electricity markets are used.



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Why do we need an ETM?

- The standards require a transparent hourly balancing market that fairly allocates the costs related to inaccurate forecasting of generation production/imports and customer demand/exports on both sides of the border.
- The balancing market and its associated settlement system should be managed by an independent market operator (MO) and a clearinghouse (CH) which will ensure payment of settlements.
- These minimum standards constitute the **electricity trading mechanism**.
- The standards also require that an independent and competent energy regulator oversee and monitor the competitive electricity market.



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USAID Proposed Initiative

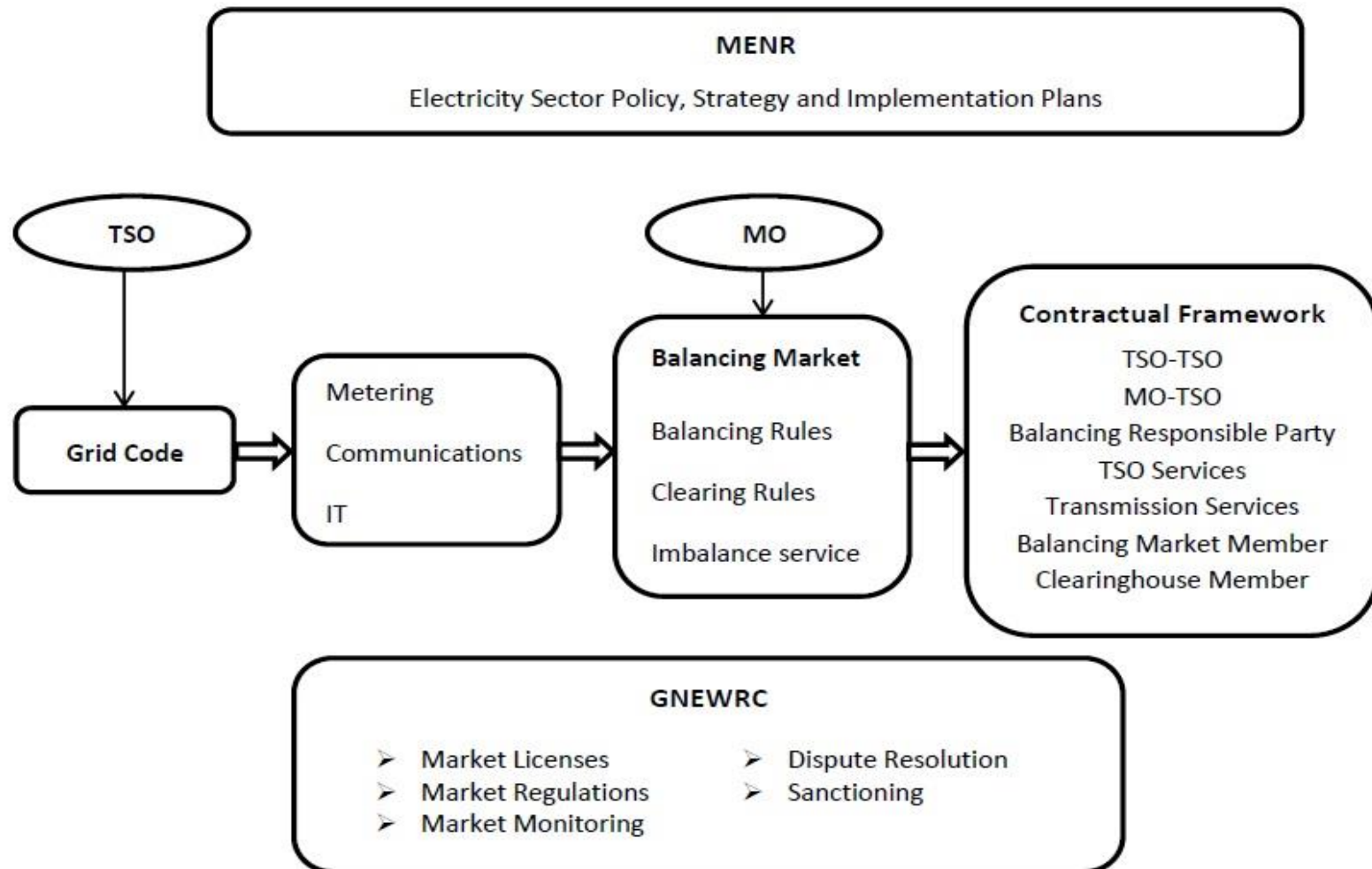
- Come to agreement on a plan to implement the enabling trading mechanism with both GoG and IFIs.
- Shift HIPP's main focus from promotional activities to support of the enabling energy trading mechanism.
- HIPP has developed:
 - A statement of intent (4 pages)
 - Vision of electricity market in 2015 (40+ pages)
 - Roadmap for reaching the 2015 Vision (~15 pages)
 - Action plans for each implementing party
 - Technical Assistance and Infrastructure Improvement Plan



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Vision Statement: what should be in place

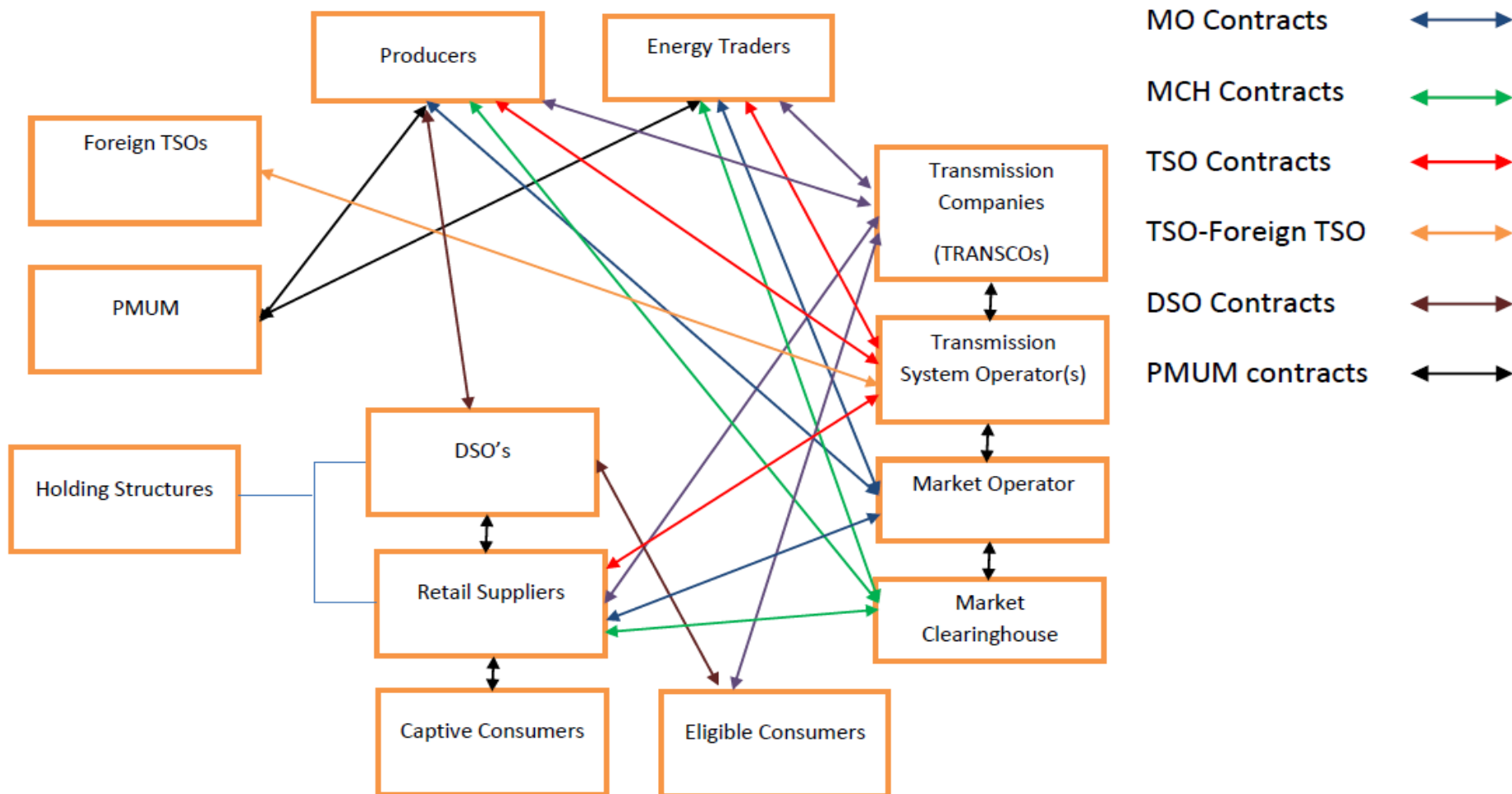




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Vision Statement: Parties to Service Contracts under GEMM 2015





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How to achieve GEMM? (Road Map)

- It will require a great deal of effort by all parties currently operating in the electricity sector of Georgia as well as a significant amount of donor and IFI support.
- Road Map discussion document describes what should be done in order to achieve GEMM 2015;

[illegible]



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Envisaged GSE's current functions under the GEMM 2015

Current functions of GSE will be separated. The independent TSO will be established and the transmission company will own lines business.

- **TSO** - manages the security of the regional power system in real time and coordinates the supply of and demand for electricity.
- **Transmission company** – owns and operates high voltage transmission lines and substations.



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Envisaged ESCO's current functions under the GEMM 2015

Current functions of ESCO will be separated
and more functions will be added as required
for hourly balancing

- **MO** - carrying hourly balancing activities and ensuring market performance.
- **Consolidator** - trading output from small HPPs and supporting its sales.



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What's the main difference between GSE's Dispatch Center and TSO?

- **Dispatch Center-**
dispatches
generating units
(productions)
- **TSO** – dispatches
contracts and
manages electricity
system.



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The TSO license issued by the Commission authorizes the it to conduct following activities:

- Dispatch of generation;
- Manage outages and emergency situations;
- Develop of a system of support services charges;
- Operate the physical settlement system;
- Manage interconnector flows;
- Establish and maintain operational security standards
- Forecast at least 10 year system developments (generation capacity and demand forecasts)



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Balancing

- MO selects the balancing entities that can provide real time balancing.
- MO determines the prices for ramping up and ramping down (generation and load).
- TSO dispatches the balancing entities within its control area.
- The MO calculates the differences between the scheduled (generation and loads) and the actual (generation and loads) for all market participants. Providing the difference (positive or negative) is called imbalance service.
- The cost of the real time balancing for an hour is allocated to any market participant that used imbalance service.



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Implementation Parties Action Plans: GSE

TSO(s)	GSE/TSO 2012	TSO 2013	TSO 2014	TSO 2015
1	TSO functions within GSE created - September	Final transformation of GSE into separate TRANSCOs and TSO -January		
2	Metering & Communications Rules drafted - June	Updated Grid Code Drafted - April	Contribute to GEMM 2017 Vision - February	
3	Initial Transmission Grid Code drafted - October	International Interconnection Agreement		
4	TSO-TSO (IOA?)contract templates developed - September- October	Congestion Management Rules		
5	Congestion Management Rules (Initial, for Turkey) - June- October	Cross-border Capacity Allocation Rules		
6	Metering/Comm./IT designed - September			
7	Metering/Comm./IT procured - October			
8	Metering and Comm. Installed -December			
9	Cross-border Capacity Allocation Rules (Initial, for Turkey)- June- September			
10	Draft TSO - generators Ancillary Services Contract Templates -October			
11	Draft TSO - generators Transmission Losses Contract Templates -October			



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GSE's key activities in 2012

1. Establishing new TSO unit within GSE

- Creation (September)
- Training of employees

2. Draft contract templates and rules

- Grid code
- Congestion management rules
- Cross-Border capacity allocation rules
- TSO-TSO contract template
- TSO-Generators Transmission Losses contract templates

3. New Infrastructure installation

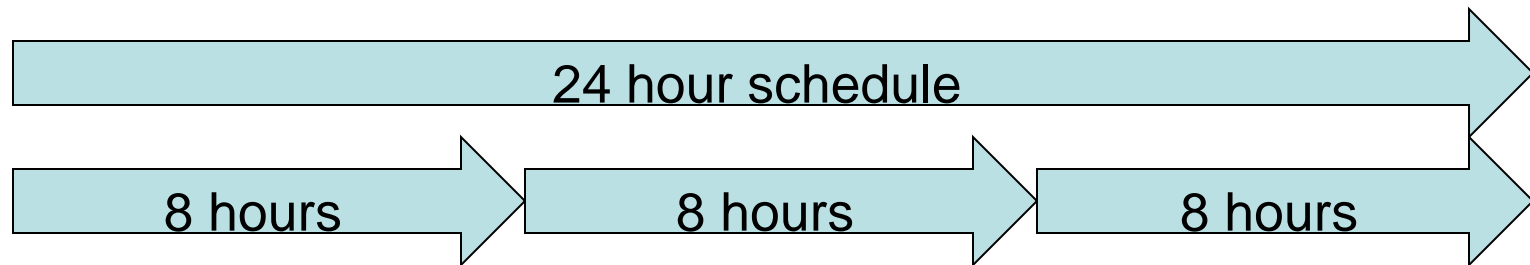
- Metering
- Communications
- IT design



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Challenges



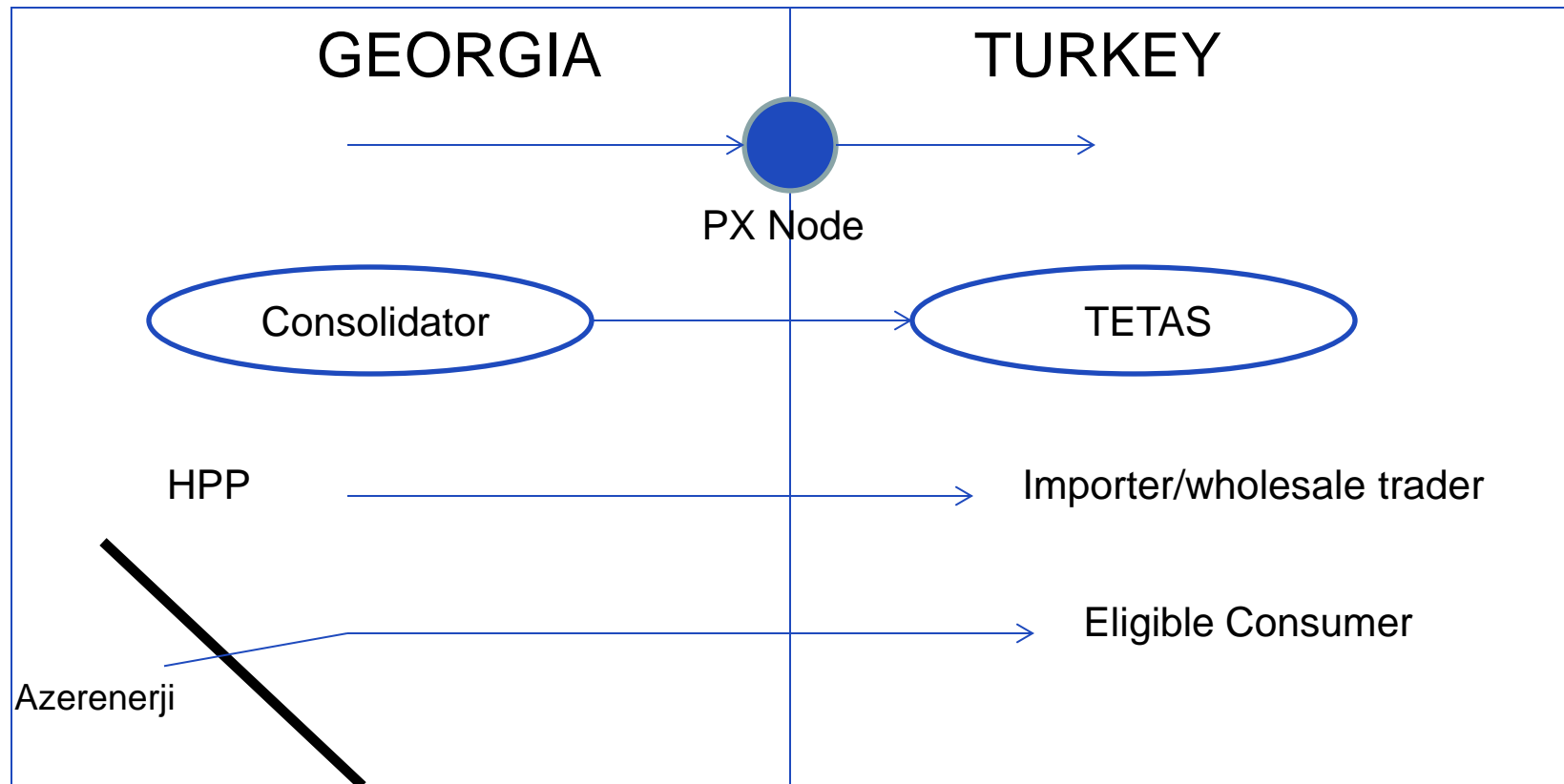
Turkish power market is continuing movement toward increased competition – for example, scheduling will be done intraday soon.



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Examples of C-B Trading





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USAID Proposed Initiative

- USAID would like to request key Stakeholders to:
 - Agree to coordinate all activities on the trading mechanism in a special **working group**
 - Speak with **one common voice** on the electricity trading mechanism
 - Provide **feedback** on proposed draft documents/process
 - Provide **financial support**, if feasible, on certain aspects of the initiative
 - Agree on deadlines/**conditionalities** with GoG
 - Perhaps create a **joint implementation agreement**



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